ABSTRACT OF THE DISCLOSURE

This invention provides PEG-modified semiconductor nanoparticles of which fluorescence intensity is effectively inhibited from lowering, which are capable of forming a stable dispersion in water, and which are capable of bonding easily with biomolecules having specific recognition, as well as methods for conveniently preparing such nanoparticles, and a material for biological diagnosis. The water-soluble PEG-modified semiconductor nanoparticles of the present invention includes a structure having PEG of a number average molecular weight of 300 to 20000 having a thiol group at one end, bonded via cadmium to II-VI semiconductor nanocrystals of a core-shell structure having a ZnX (wherein X stands for O, S, Se, or Te) shell.